

## Fresno General Plan Objectives, Policies, and Implementation Measures Relating to Air Quality

The following background information, goals, and policies supplement the text of 2025 Fresno General Plan as adopted in November of 2002. The San Joaquin Valley Air Pollution Control District (hereinafter “District” or “SJVAPCD”) has supplied most of the information incorporated into the following background discussion to aid in amending and augmenting general plans to improve Valley air quality and to comply with specific requirements of California Assembly Bill 170 (AB 170). The background section now covers specific technical information on of air quality, the regulatory and policy context for planning strategies to address air quality improvement, and suggested measures to be included in general plans. It also provides links to websites that provide additional information and current status of air quality attainment, pollutant emission inventories, and air quality regulations.

While policies to address global climate change through reduction in greenhouse gas emissions is not specifically included in AB 170, the City of Fresno considers it timely to include appropriate measures to achieve this goal as outlined in Assembly Bill 32 and related Executive Orders from the Governor’s Office.

### **Applicable 2025 Fresno General Plan Goals:**

2. Pursue coordinated regional planning with Fresno and Madera Counties and the City of Clovis.
3. Preserve and revitalize neighborhoods, the downtown, and historical resources.
5. Support the Growth Alternatives Alliance “Landscape of Choice—Principles and Strategies” as based upon the Ahwahnee Group Principles, both of which are included in the [2025 Fresno General Plan] Appendix.
6. Coordinate land uses and circulation systems to promote a viable and integrated multi-modal transportation network.
7. Manage growth to balance Fresno’s urban form while providing an adequate public service delivery system which is fairly and equitably financed.
9. Provide activity centers and intensity corridors within plan areas to create a mix of land uses and amenities to foster community identity and reduce travel.
11. Protect, preserve, and enhance significant biological, archaeological, and paleontological resources and critical natural resources, including, but not limited to, air, water, agricultural soils, minerals, plants, and wildlife resources.
14. Protect and improve public health and safety.

## **Background:**

### **TOPOGRAPHY AND CLIMATE**

Regional factors affect the accumulation and dispersion of air pollutants within the San Joaquin Valley Air Basin (SJVAB).

Air pollutant emissions overall are fairly constant throughout the year, yet the concentrations of pollutants in the air vary from day to day and even hour to hour. This variability is due to complex interactions of weather, climate, and topography. These factors affect the ability of the atmosphere to disperse pollutants. Conditions that move and mix the atmosphere help disperse pollutants, while conditions that cause the atmosphere to stagnate allow pollutants to concentrate. Local climatological effects, including topography, wind speed and direction, temperature, inversion layers, precipitation, and fog can exacerbate the air quality problem in the SJVAB.

The SJVAB is approximately 250 miles long and averages 35 miles wide, and is the second largest air basin in the state. The SJVAB is defined by the Sierra Nevada in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The San Joaquin Valley (Valley), thus, could be considered a “bowl” open only to the north.

During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the Valley and flows in a south-southeasterly direction through the Valley, through Tehachapi pass, into the Southeast Desert Air Basin. In addition, the Altamont Pass also serves as a funnel for pollutant transport from the San Francisco Bay Area Air Basin into the region.

During the winter, wind speed and direction data indicate that wind occasionally originates from the south end of the Valley and flows in a north-northwesterly direction. Also during the winter months, the Valley generally experiences light, variable winds (less than 10 mph). Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high carbon monoxide (CO) and particulate matter (PM10 and PM2.5) concentrations.

The SJVAB has an “Inland Mediterranean” climate averaging over 260 sunny days per year. The valley floor is characterized by warm, dry summers and cooler winters. For the entire Valley, high daily temperature readings in summer average 95°F. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily low temperature is 45°F.

The vertical dispersion of air pollutants in the Valley is limited by the presence of persistent temperature inversions. Solar energy heats up the Earth's surface, which in turn radiates heat and warms the lower atmosphere. Therefore, as altitude increases, the air temperature usually decreases due to increasing distance from the source of heat. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at the surface or at any height above the ground, and tend to act as a lid on the Valley, holding in the pollutants that are generated here.

A more detailed discussion of climatology and air quality can be found in the San Joaquin Valley Air Pollution Control District's *Guide for Assessing and Mitigating Air Quality Impacts: Technical Document*, available on the District's website: <http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Tech%20Doc%20Jan%202002%20Rev.pdf>.

## CRITERIA POLLUTANTS

The California Air Resources Board (ARB) and the federal Environmental Protection Agency (EPA) have established criteria air pollution standards in an effort to protect human health and welfare. Geographic areas are deemed "attainment" if these standards are met or nonattainment if they are not met. Nonattainment status is classified by the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious.

Current federal and state standards can be found online on the ARB website at: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>

At the federal level the District is currently designated as serious nonattainment for the 8-hour ozone standard, attainment for PM10 and CO, and nonattainment for PM2.5. A new finding of "extreme" nonattainment with the 8-hour ozone standard is currently pending, and is expected to be approved by the federal EPA in 2009. At the state level the District is designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 standards. The District's current attainment status for criteria pollutants under federal and state clean air acts can be found on the District's website at: <http://www.valleyair.org/aqinfo/attainment.htm>

The following section summarizes the pollutants of greatest importance in the San Joaquin Valley. It provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere. Air pollution in the Valley results from emissions generated in the Valley as well as from emissions and secondary pollutants transported into the Valley. It is thought that the bulk of the

Valley's summer and winter air pollution is caused by locally generated emissions. Due to the Valley's meteorology, topography, and the chemical composition of the air pollutants, NO<sub>x</sub> is the primary culprit in the formation of both ozone and PM<sub>2.5</sub>.

**Ozone** – Ozone (O<sub>3</sub>) and particulate matter are the two pollutants that are responsible for the bulk of the Valley's air quality problems. Ozone is the major component of the Valley's summertime "smog," and it affects human health and vegetation. Ozone is not emitted directly into the air, but is created by a series of chemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NO<sub>x</sub>) that take place in the presence of sunlight. ROG and NO<sub>x</sub> are emitted from fuel combustion, agricultural processes, and industrial processes that are widespread throughout the Valley as well as from natural sources. Studies have also linked urban areas with both higher regional temperatures and higher ozone levels (a phenomenon known as the "urban heat island effect").

High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

**Reactive Organic Gases** – Reactive organic gases (ROG), also known as volatile organic compounds (VOC), are photochemically reactive hydrocarbons that are important for ozone formation. The primary sources of ROG are petroleum transfer and storage, oil and gas production, mobile sources, organic solvent use, farming operations, and miscellaneous processes. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment.

**Oxides of Nitrogen** – Oxides of Nitrogen (NO<sub>x</sub>) are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. The major component of NO<sub>x</sub>, nitrogen dioxide (NO<sub>2</sub>), is a reddish-brown gas that is toxic at high concentrations. NO<sub>x</sub> results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

**Particulate Matter** – Particulate matter (PM) is any material except pure water that exists in the solid or liquid state in the atmosphere. Suspended particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods. Respirable particulate matter consists of particles small enough to be inhaled, pass through the respiratory system, and lodge in the lungs with resultant health effects. Respirable particulate matter includes "inhalable coarse particles," with diameters larger than 2.5 micrometers and smaller than 10 micrometers (PM<sub>10</sub>), and "fine particles," with diameters that are 2.5 micrometers and smaller (PM<sub>2.5</sub>).

PM10 and PM2.5 are primary pollutants (emitted directly to the atmosphere) and secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, PM2.5 sources tend to be combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM10 sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust in the Valley.

Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children.

**Carbon Monoxide** – Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO in the San Joaquin Valley is on-road motor vehicles. Other CO sources in the Valley include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources.

Because of the local nature of CO problems, the ARB and EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM10. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled (VMT), with the introduction of new automotive emission controls and fleet turnover.

**Sulfur Dioxide** – Sulfur Dioxide (SO<sub>2</sub>) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. The SJVAB is in attainment of both the federal and California standards. However, like airborne NO<sub>x</sub>, suspended SO<sub>x</sub> particles contribute to the poor visibility that sometimes occurs in the Valley. These SO<sub>x</sub> particles are also a component of PM10. The prevalence of low-sulfur fuel use in Valley has minimized problems from this pollutant.

**Lead** – Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage; it can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of Pb have dropped dramatically. Lead concentrations were last systematically measured in the SJVAB in 1989, when the average concentrations were approximately five percent of the state lead standard. Though monitoring was discontinued in 1990, lead levels are probably well below applicable standards, and the SJVAB is designated in attainment for lead.

A detailed discussion of selected criteria air pollutants can be found in the *District's Guide for Assessing and Mitigating Air Quality Impacts: Technical Document*, available on the District's website at:

[www.valleyair.org/transportation/ceqa\\_guidance\\_documents.htm](http://www.valleyair.org/transportation/ceqa_guidance_documents.htm)

## **AIR QUALITY MONITORING DATA**

The District, the ARB, the U.S. National Park Service, and the Santa Rosa Rancheria in Lemoore operate an extensive air monitoring network to measure progress toward attainment of the NAAQS. Air quality monitoring networks are designed to monitor areas with: high population densities, areas with high pollutant concentrations, areas impacted by major pollutant sources, and areas representative of background concentrations. Some monitors are operated specifically for use in determining attainment status, while others are operated for other purposes, such as for generating daily air quality forecasts. In total, the District utilizes ozone and PM data from over 60 monitors operated at 29 sites in the Valley. All monitors must comply with the pollutant standard for the San Joaquin Valley to be considered as attainment for that standard.

More information and a map of air quality monitors within the SJVAB can be found on the ARB website at:

[http://www.arb.ca.gov/qaweb/basinsselect.php?b\\_airs\\_code=09](http://www.arb.ca.gov/qaweb/basinsselect.php?b_airs_code=09)

## **LOCAL, DISTRICT, STATE, AND FEDERAL POLICIES, PROGRAMS AND REGULATIONS**

All levels of government have some responsibility for protecting air quality. This section outlines the responsibilities of federal, state, regional, and local government agencies in air quality matters and explains how they interact.

### **FEDERAL**

At the federal level, the EPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA). The federal CAA was first signed into law in 1963. Congress substantially amended the federal CAA in 1970, 1977, and 1990.

The EPA deals with global, international, national, and interstate air pollution issues. Their primary role at the state level is one of oversight of state air quality programs. The EPA sets federal standards for vehicle and stationary sources and provides research and guidance in air pollution programs.

The federal CAA required the EPA to set National Ambient Air Quality Standards (NAAQS) for several problem air pollutants on the basis of human health and welfare criteria. Two types of NAAQS have been established: primary standards, which protect

public health, and secondary standards, which protect public welfare (e.g., crops, forests, materials, visibility, etc.). Primary NAAQS have been established for the following criteria air pollutants:

- Carbon monoxide (CO)
- Ozone (O<sub>3</sub>)
- Respirable particulate matter (PM<sub>10</sub>)
- Fine particulate matter (PM<sub>2.5</sub>)
- Nitrogen dioxide (NO<sub>2</sub>)
- Sulfur dioxide (SO<sub>2</sub>)
- Lead (Pb)

All of the above, except CO, also have some form of secondary standard. The primary NAAQS standards are intended to protect, within an adequate margin of safety, those persons most susceptible to respiratory distress, such as people suffering from asthma or other illness, the elderly, very young children, or others engaged in strenuous work or exercise.

The EPA designates areas with air quality not meeting federal standards as “nonattainment.” The federal CAA further classifies nonattainment areas based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious.

The federal CAA requires areas with air quality violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures that states such as California will use to attain the NAAQS. The federal CAA amendments of 1990 require states containing areas that violate the NAAQS to revise their SIP to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of Air Basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the federal CAA amendments and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and impose additional control measures.

In addition to setting health-based standards for air pollutants, the EPA also oversees state and local actions to improve air quality. The following list provides a brief explanation of important regulations set forth by EPA:

### **Federal Clean Air Act (CAA)**

- Requires air quality plans to include measures necessary to achieve NAAQS.
- Requires all plans, programs, and projects that require federal approval, including transportation plans, to conform to air quality plans.

- Requires sanctions if all feasible measures are not expeditiously adopted.
- The full text of the CAA can be found on the EPA website at <http://www.epa.gov/air/caa/>

## **Intermodal Surface Transportation Efficiency Act (ISTEA)**

- Requires transportation projects to not impact the ability to attain air quality standards.
- Requires demonstration of expeditious implementation of Transportation Control Measures (TCMs).
- More information on ISTEA can be found on the Department of Transportation website at: <http://www.dot.gov/ost/govtaffairs/istea/>
- The text of the ISTEA can be found on the National Park Service website at: [http://www.nps.gov/history/history/online\\_books/fhpl/istea.pdf](http://www.nps.gov/history/history/online_books/fhpl/istea.pdf)

## **Federal Transportation Funding Reauthorization**

- Provides funding for transportation projects that enhance air quality (e.g. Congestion Mitigation Air Quality (CMAQ), Transportation Enhancement, and Bicycle and Pedestrian Funding).
- Provides funding source for expeditious implementation of TCMs included in air quality plans.
- Information on the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) can be found on the National Highway Traffic Safety Administration website at: <http://www.nhtsa.dot.gov/people/perform/pages/funding.htm>

## **STATE**

States are required to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. States may also establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to Health and Safety Code Section 39606(b) and its predecessor statutes.

The California Legislature established the ARB in 1967. The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) of 1988. The CCAA provides a planning framework for attainment of the CAAQS for ozone, CO, SO<sub>2</sub>, and NO<sub>2</sub>. The CCAA classifies ozone nonattainment areas as moderate, serious, severe, and extreme based on severity of violation of state ambient air quality standards. For each class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an

approved alternative measure of progress is developed. Air districts responsible for air basins with air quality that is in violation of CAAQS for ozone, CO, SO<sub>2</sub>, and NO<sub>2</sub> are required to prepare an air quality attainment plan (AQAP) that lays out a program to attain the CCAA mandates.

Other ARB duties include monitoring air quality in conjunction with air monitoring networks maintained by air pollution control districts (APCDs) and air quality management districts (AQMDs), establishing CAAQS (which are more stringent than the NAAQS in many cases), setting emissions standards for new motor vehicles, and reviewing district input for the SIP required by the federal CAA amendments. The SIP consists of the emissions standards for vehicular sources set by the ARB as well as attainment plans adopted by the APCD or AQMD and approved by the ARB.

The State of California, through the ARB and Bureau of Automotive Repair, develops programs to reduce pollution from vehicles and consumer products. The following list provides a brief explanation of important regulations set forth by the State of California:

### **California Clean Air Act (CCAA)**

- Requires all feasible control measures, including transportation control measures, to reduce emissions.
- Provides for indirect source programs in attainment plans.
- Contains targets for emission reductions, vehicle miles traveled, and average vehicle ridership.
- More information on CAAQS can be found on the ARB website at: <http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm>

### **SB (Senate Bill) 709:**

- Adds Chapter 5.7 to Part 3 of Division 26 of the Health and Safety Code, giving the District more responsibility in terms of permitting, fee implementation, and agricultural assistance, but also gives the District the authority to require the use of best available control technology for existing sources, promote cleaner-burning alternative fuels, and encourage and facilitate ridesharing.
- Adds Section 9250.16 to the Vehicle Code to allow the District to adopt a surcharge on motor vehicle registration fees in counties within the District.
- The California Health and Safety Code can be found on the Official California Legislative Information website at: <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=hsc&codebody=&hits=20>
- The California Vehicle Code can be found on the Official California Legislative Information website at: <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=veh&codebody=&hits=20>

## **California Government Code Section 65089:**

- Requires trip reduction and travel demand management in Congestion Management Programs.
- The full text of the Section 65089 can be found on the Official California Legislative Information website at: <http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=gov&codebody=&hits=20>

## **AB (Assembly Bill) 170**

[more specific information appears at the end of this Background section]

- In adding Section 65302.1 to the Government Code, requires cities and counties in the Valley to incorporate strategies to improve air quality in their general planning efforts.
- The full text of the AB 170 can be found on the Official California Legislative Information website at:  
[http://www.leginfo.ca.gov/cgi-bin/postquery?bill\\_number=ab\\_170&sess=CUR&house=A&search\\_type=bill\\_update](http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_170&sess=CUR&house=A&search_type=bill_update)

## **REGIONAL**

Air pollution does not respect political boundaries. Therefore, many air quality problems are best managed on a regional basis. In 1991 the State Legislature determined that management of an air basin by a single agency would be more effective than management through each county within that basin. Air basins are geographic areas sharing a common "air-shed." Most major metropolitan areas in California now fall under the authority of multi-county APCDs or AQMDs.

Air districts have the primary responsibility for control of air pollution from all sources other than direct motor vehicle emissions, which are the responsibility of the ARB and EPA. Air districts adopt and enforce rules and regulations to achieve state and federal ambient air quality standards and enforce applicable state and federal law.

The District has jurisdiction over air quality matters in the SJVAB. The District was formed in 1991. Its headquarters are located in Fresno with regional offices located in Bakersfield in the Southern Region and Modesto in the Northern Region. The District has jurisdiction over the eight counties within the air basin and includes the counties of Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Note that the eastern portion of Kern County falls outside the SJVAB and lies within the Mojave Desert Air Basin.

Until the passage of the CCAA, the primary role of county APCDs was controlling stationary sources of pollution, such as industrial processes and equipment. With the passage of the CCAA and federal CAA amendments, air districts were required to implement transportation control measures and were encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created

the necessity for air districts to work closely with cities, counties, and regional transportation planning agencies to develop new programs.

The District entered into a memorandum of understanding with the transportation planning agencies of the eight counties in the SJVAB in 1992. This memorandum of understanding ensures a coordinated approach in the development and implementation of transportation plans throughout the Valley. This action has helped the Regional Transportation Planning Agencies comply with pertinent provisions of the federal and state Clean Air Acts as well as related transportation legislation (such as the Intermodal Surface Transportation Efficiency Act).

The District develops plans and implements control measures in an effort to advance Valley attainment of CAAQS and NAAQS. The District has developed plans to attain state and federal standards for ozone and particulate matter. The District's air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced. The plans also use computer modeling to estimate future levels of pollution and make sure that the Valley will meet air quality goals on time. The District Governing Board approved three major plans in 2007-2008.

## **2007 Ozone Plan**

- The District approved the *2007 Ozone Plan* on April 30, 2007. This plan included an in-depth analysis of all possible control measures and projected that the Valley will achieve the 8-hour ozone standard (as set by EPA in 1997) for all areas of the SJVAB no later than 2023.
- This plan went above and beyond minimum legal requirements by including a "Fast Track" control strategy. Through Fast Track, new strategies produce real reductions (even though they can not be legally counted in the plan at this time) and will clean the air before the deadline.
- The ARB approved the *2007 Ozone Plan* on June 14, 2007.
- The District's *2007 Ozone Plan* can be found online at the District's website at: [http://www.valleyair.org/Air\\_Quality\\_Plans/AQ\\_Final\\_Adopted\\_Ozone2007.htm](http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm)

## **2007 PM 10 Plan**

- The District has compiled a series of PM10 Plans, with the first one in 1991. Based on PM10 measurements from 2003-2006, EPA found that the SJVAB had reached the federal PM10 standard.
- The District's *2007 PM10 Maintenance Plan and Request for Redesignation*, approved on September 21, 2007, assures that the Valley will continue to meet the PM10 standard and requests that EPA formally redesignate, or label, the Valley to attainment status. On April 5, 2008, EPA stated their intent to approve the PM10 Maintenance Plan.

- The District's *2007 PM10 Maintenance Plan* can be found online at the District's website at:  
[http://www.valleyair.org/Air\\_Quality\\_Plans/docs/Maintenance%20 Plan10-25-07.pdf](http://www.valleyair.org/Air_Quality_Plans/docs/Maintenance%20Plan10-25-07.pdf)

## **2008 PM 2.5 Plan**

- The District approved the *2008 PM2.5 Plan* on April 30, 2008. Building upon the strategy used in the *2007 Ozone Plan*, the District agreed to additional control measures to reduce directly produced PM2.5. The *2008 PM2.5 Plan* estimates that the SJVAB will reach the PM2.5 standard (as set by EPA in 1997) in 2014.
- The ARB approved the Plan on May 22, 2008, and the plan has been submitted to EPA.
- The District's *2008 PM2.5 Plan* can be found online at the District's website at:  
[http://www.valleyair.org/Air\\_Quality\\_Plans/AQ\\_Final\\_Adopted\\_PM25\\_2008.htm](http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_PM25_2008.htm)

## **LOCAL**

Local government's responsibility for air quality increased significantly with the passage of the CCAA and the federal CAA amendments. Both of these pieces of legislation place new emphasis on reducing motor vehicle trips and vehicle miles traveled at the local level. Although the District is required to address state air quality standards by way of TCMs and indirect source programs in its air quality attainment plans, cities and counties, through their Councils of Government, are responsible for most implementation.

Local government responsibilities for air quality are found in four areas: (1) land use planning; (2) reviewing and mitigating the environmental impacts of development projects; (3) developing and maintaining the transportation infrastructure in the community, including transit systems; (4) implementing local air quality programs such as commute-based trip reduction and rideshare.

**Land Use** – State law places responsibility for land use planning in the hands of city and county governments. With this responsibility comes the authority to approve development projects. As part of their duties, cities and counties are required to prepare a "general plan." The general plan is a comprehensive document that sets a community's goals and policies for development over a long period (often 20 years) and designates in general terms where certain land uses will be allowed. The general plan has seven mandatory elements, but any issues can be addressed as the city or county sees fit. Air quality can be addressed within one or more of the mandatory elements, usually the Land Use, Conservation, or Circulation Elements. Section 65302.1 of California Government Code, added by AB 170 in 2003, requires cities and counties in the San Joaquin Valley to amend appropriate elements of general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality.

**Environmental Review** – The California Environmental Quality Act (CEQA) was enacted by the state legislature in 1970 and has been amended on numerous occasions. It applies to government initiated plans, projects, and regulations as well as to private projects requiring discretionary approval from a state or local agency. Under CEQA, a local planning agency is designated as the lead agency for most private development projects. CEQA requires the lead agency to conduct an initial study to determine if a project may have a significant adverse impact on the environment. Lead agencies are required to consult with and request comments from responsible agencies, agencies that exercise authority over resources, which may be affected by the project. The lead agency may choose to require or not require the measures suggested by the responsible agency. Projects with significant adverse impacts require the lead agency to prepare a report referred to as an Environmental Impact Report (EIR). Projects that will not have a significant effect, or projects that are modified to avoid significant effects, require the lead agency to prepare a Negative Declaration. CEQA allows lead agencies to disapprove a project if necessary to avoid one or more significant effects on the environment. The planning agencies' authority to disapprove projects compels developers to include measures in the project to reduce significant environmental impacts.

The District has prepared three guidance documents to aid agencies in performing environmental reviews. The documents are briefly described below:

- ***Air Quality Guidelines for General Plans (AQGGP)*** – The AQGGP is a guidance and resource document for cities and counties to use to address air quality in their general plans. The AQGGP includes goals, policies, and programs to reduce vehicle trips, reduce miles travelled, and improve air quality. The AQGGP can be found on the District's website at: <http://www.valleyair.org/transportation/Entire-AQGGP.pdf>
- ***Guideline for Assessing and Mitigating Air Quality Impacts (GAMAQI)*** – The GAMAQI is an advisory document, that provides Lead Agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The document includes a discussion of the District's role in the CEQA process, identifies actions that can be taken by land use agencies to reduce air quality impacts, and the District' thresholds of significance. The *Technical Document* contains information for use in air quality assessments, such as air quality data, regulatory setting, climate, topography, etc. The GAMAQI can be found on the District's website at: <http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf>
- ***Environmental Review Guideline (ERG)*** – The ERG fulfills CEQA requirements for agencies to adopt procedures and guidelines for implementing CEQA. The document is intended to guide District staff in carrying out CEQA and to assure the public that environmental impacts related to District actions are thoroughly and consistently addressed. The ERG can be found on the District's website at:

[http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20\\_August%202000\\_.pdf](http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf)

**Transportation Infrastructure** – The federal CAA amendments require transportation plans to conform to the air quality goals of the SIP. This means that states must assure that transportation programs do not undermine the attainment of air quality standards. The Regional Transportation Planning Agencies are responsible for making the conformity finding. The Air District's role in this process is one of consultation.

**Air Quality Programs** – The CCAA allows air districts to delegate the implementation of transportation control measures to any local agency as long as the following conditions are met: (1) the agency must submit an implementation plan to the district for approval; (2) the agency must adopt and implement measures at least as stringent as those in the district's plan; and (3) the district must adopt procedures for reviewing the performance of the local agency in implementing the measures. Some local agencies prefer to maintain local control of these programs to ensure that all local concerns and issues are addressed. Local government's close working relations with the individuals and businesses affected by the programs may generate more public interaction and program support. On the other hand, large businesses with worksites in more than one jurisdiction often prefer dealing with a regional agency so that compliance is uniform. A transportation control measure in which local government has an important role is in low-emission fleet vehicle programs. Cities and counties often operate the largest vehicle fleets in their jurisdictions. Programs to convert vehicle fleets to cleaner burning fuels have significant air quality benefits and can provide a model to private industry.

## **SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT GOALS, POLICIES, AND OBJECTIVES**

The District's primary responsibility is the control of air pollution from stationary sources (sources other than direct motor vehicle emissions, which are the responsibility of the ARB and EPA). Permitting stationary sources provides a number of benefits to the public and to regulated sources. It provides an opportunity for the project proponent, the District, and the interested public to provide input and to assess a project's compliance with federal, state, and local air requirements prior to beginning construction. It also provides a mechanism to consolidate and simplify the applicable air regulations in one brief document; and it provides guidance to both the applicant and the District that can be used on an ongoing basis to assure that the equipment or process is operating in compliance with those rules.

Because of the severity of the air quality problems, permits are required in the Valley for very small sources of emissions; as little as two pounds of emissions per day can trigger permitting requirements. The permitting process involves two steps. The first step requires the applicant to apply for and receive an Authority to Construct (ATC) permit.

Construction of new or modified facilities or equipment may not legally proceed until an ATC is issued by the District. The requirements that must be met to obtain a permit in the Valley are among the strictest in the nation, requiring mitigation of emissions using best available control technology (BACT) and for non-agricultural sources offsetting emissions when above certain thresholds (SB 700). The second step, issuing the Permit to Operate (PTO), occurs after the applicant has properly installed the equipment allowed by the Authority to Construct.

In addition to permitting stationary sources the District was required by CCAA attainment plans to develop indirect source control programs. Indirect sources are defined as any building, facility, activity center, etc. that attracts motor vehicle trips. The District committed to reducing PM10 and NOx emissions from indirect sources in the *2003 PM10 Plan* and the *2004 Extreme Ozone Attainment Demonstration Plan*. The District's Governing Board adopted District Rule 9510 (Indirect Source Review) in October 2006 as a result of this commitment. District Rule 9510 requires applicants to mitigate project impacts through the incorporation of on-site emission reducing design elements and/or the payment of fees that would be used to fund off-site emissions reduction projects.

The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Adoption of new air quality attainment plans by SJVAPCD, calling for broader and more stringent rules and regulations to achieve compliance with national and state standards, is expected to synergistically accelerate progress toward attainment of clean air act standards.

The *Air Quality Guidelines for General Plans (AQGGP)*, adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

More information on land use strategies can be found on the District's website at: [http://www.valleyair.org/transportation/land\\_use\\_strategies.htm](http://www.valleyair.org/transportation/land_use_strategies.htm)

The District's *Air Quality Guidelines for General Plans* can be found on the SJVAPCD website at: <http://www.valleyair.org/transportation/Entire-AQGGP.pdf>

## EMISSION INVENTORIES

An emission inventory is an itemized list of pollutants in a given area for a specified time period, as estimated by use of sophisticated technical computer models. Present and future year inventories are important parts of air quality planning and modeling. Air pollution comes from many sources such as large industrial facilities, as well as things we use in our daily lives such as cars and trucks, paints, and aerosol spray products. For convenience, sources of air pollution have been grouped into the categories listed below to reflect the source of emissions or the purpose of the estimate.

**Area Source** – Area source emissions are from sources that are not regulated by the District, or are individually so small that they may not be included in the District's survey system. These small sources may not individually emit significant amounts of pollutants, but when aggregated can make an appreciable contribution to the emission inventory. Examples of these area sources are residential water heating and use of paints, varnishes, and consumer products. Emissions from these sources are grouped into categories and calculated based on surrogate variables.

Of the more than 500 area-wide source categories established by the ARB, the District is responsible for estimating emissions from approximately 100. Emissions for the remaining categories are estimated by either ARB or the Department of Pesticide Regulation (DPR).

**Point Source** – Facilities that have valid District permits are called point sources. Refineries, gas stations, dry cleaners and industrial plants are examples of point sources in our District. The District's Technical Services Division collects and maintains a database with detailed information on each point source that submits data. Almost all facilities emitting greater than 2.5 tons/year of any air pollutant are included. The District's database contains information for more than 4,000 facilities.

Data on the activity, seasonal variations, and hours of operation are collected from each facility each year through a survey process. Emissions are calculated using detailed data for each of the facilities by various processes. Each year the District provides point source emissions inventory data to ARB to be included in their CEIDARS database.

**Mobile Source** – Mobile sources consist of motor vehicles among other mobile sources. Mobile sources are classified as being on-road or off-road. On-road motor vehicles consist of passenger cars, trucks, buses and motorcycles. Emissions from on-road motor vehicles are a major portion of the emission inventory, and are estimated by ARB using computer models. Off-road mobile sources generally consist of vehicles in which the primary function is not transportation. Examples of off-road vehicles include construction and farm equipment. Other mobile sources include boats and ships, trains, and aircraft. The District estimates emissions for ships and aircraft in our area source inventory. The remaining sources are estimated by ARB as part of their off-road inventory.

**Natural Source** – In addition to man-made air pollution, there are significant quantities of pollutants from natural source. Natural sources include biological and geological sources, wildfires, windblown dust, and biogenic emissions from plants and trees. Emissions from natural sources are estimated by ARB.

Additional information on emission inventories and District methodologies can be found on the District’s website at: [http://www.valleyair.org/busind/pto/Tox\\_Resources/emissions\\_inventory.htm](http://www.valleyair.org/busind/pto/Tox_Resources/emissions_inventory.htm).

Detailed information regarding current emissions inventory by region (air basin and county) can be found on the ARB website at: <http://www.arb.ca.gov/ei/emissiondata.htm>

The District’s *Annual Report to the Community, October 2008* provides a brief discussion of sources of air pollution and identifies the top 10 sources for NOx, VOC, and PM2.5 emissions projected for Year 2010, set forth in the table below. The *Annual Report to the Community* can be found on the District’s website at: [http://www.valleyair.org/General\\_info/pubdocs/2008AnnualReportfinal-web.pdf](http://www.valleyair.org/General_info/pubdocs/2008AnnualReportfinal-web.pdf)

<b>Top 10 Significant Sources of Criteria Pollutant Emissions</b>		
<b>NOx</b>	<b>VOC</b>	<b>PM2.5</b>
Heavy Heavy-Duty Diesel Trucks	Farming Operations	Managed Burning and Disposal
Off-Road Equipment	Oil and Gas Production	Residential Fuel Combustion
Farm Equipment	Consumer Products	Farming Operations
Trains	Pesticides/Fertilizers	Heavy Heavy-Duty Diesel Trucks
Medium Heavy Duty Diesel Trucks	Light Duty Passenger Vehicles	Fugitive Windblown Dust
Light Duty Passenger Vehicles	Heavy Heavy-Duty Diesel Trucks	Paved Road Dust
Light Duty Trucks – LDT2	Off-Road Equipment	Unpaved Road Dust
Food and Agricultural Processing	Recreational Boats	Cooking
Oil and Gas Production	Light Duty Trucks – LDT2	Off-Road Equipment
Medium Duty Trucks	Food and Agriculture	Chemical Industrial Processes

A more detailed discussion on these projections can be found in the District’s *2008 PM2.5 Plan* which can be found online at: [http://www.valleyair.org/Air\\_Quality\\_Plans/AQ\\_Final\\_Adopted\\_PM25\\_2008.htm](http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_PM25_2008.htm)

## CURRENT STATUS OF PROGRESS TOWARD ATTAINMENT

Planning staff worked closely with the regional SJVAPCD on the 2025 Fresno General Plan and its accompanying Master Environmental Impact Report (MEIR). Numerous General Plan policies and MEIR mitigation measures were focused on improving air quality. During this time, the District adopted and updated attainment plans and attendant rules and regulations.

The 2025 Fresno General Plan and its MEIR gave emphasis to pursuing cleaner air as an over-arching goal. The urban form element of the General Plan was designed to foster efficient transportation and to support mass transit and subdivision design standards are being implemented to support pedestrian travel. Strong policy direction in the Public Facilities and Resource Conservation elements require that air pollution improvement be a primary consideration for all land development proposals, that development and public facility projects conform to the 2025 Fresno General Plan and its EIR mitigation measures, and that the City work conjunctively with other agencies toward the goal of improving air quality.

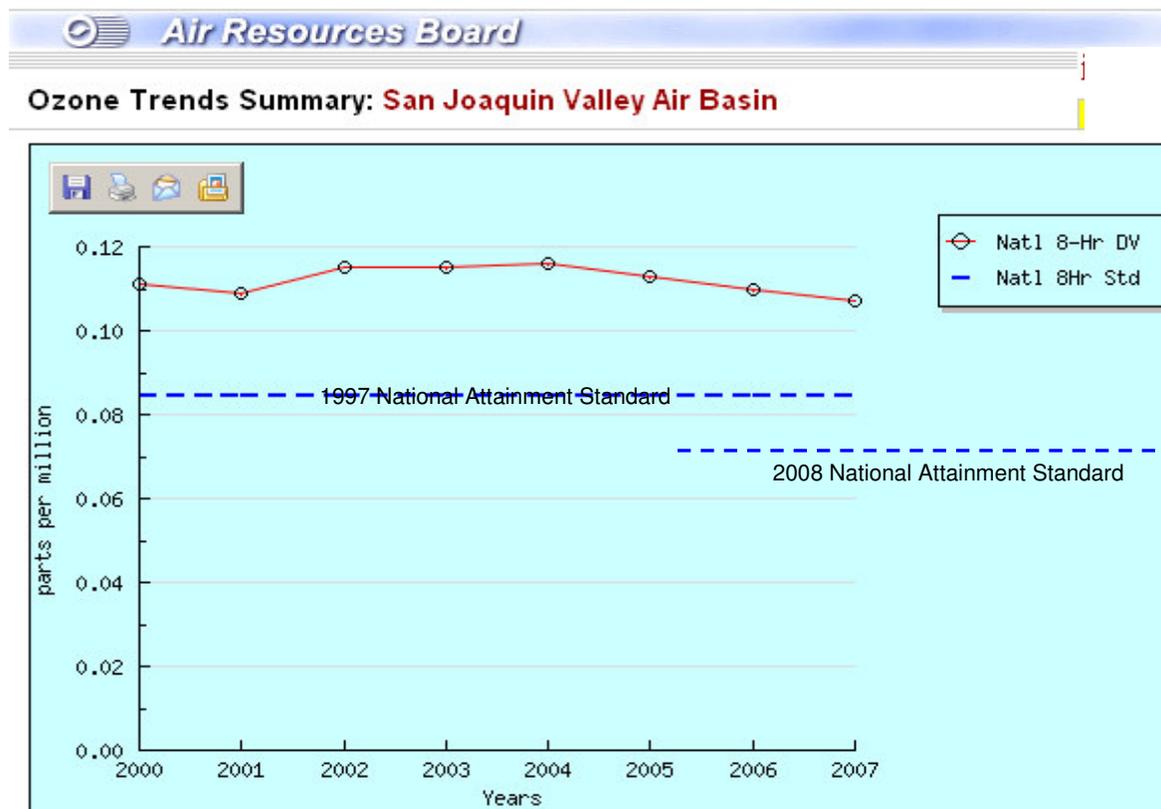
The MEIR mitigation checklist sketched out a series of actions for the City to pursue with regard to its own operations, and City departments are pursuing these objectives. The Fresno Area Express (FAX) bus fleet and the Department of Public Utilities solid waste collection truck fleet are being converted to cleaner fuels. Lighter-duty vehicle fleets are also incorporating alternative fuels and “hybrid” vehicles. Mass transit system improvements are supporting increased ridership. Construction of sidewalks, paseos, bicycle lanes and bike paths is being required for new development projects, and are being incorporated into already-built segments of City rights-of-way with financing from grants, gas tax, and other road construction revenues. Traffic signal synchronization is being implemented. The Planning and Development Department amended the Fresno Municipal Code to ban all types of residential woodburning appliances, thereby removing the most prominent source of particulate matter pollution from new construction.

Pursuant to a specific MEIR mitigation measure, all proposed development projects are evaluated with the “Urbemis” air quality impact model that evaluates potential generation of a range of air pollutants and pollutant precursors from project construction, project-related traffic, and from various area-wide non-point air pollution sources (*e.g.*, combustion appliances, yard maintenance activities, etc.). The results of this “Urbemis” model evaluation are used to determine the significance of development projects’ air quality impacts as well as the basis for any project-specific air quality mitigation measures.

Through implementation of regional air quality attainment plans by the San Joaquin Valley Unified Air Pollution Control District (SVJAPCD), as supported by implementation of 2025 Fresno General Plan policies and MEIR mitigation

measures, air pollution indices have shown improvement. Progress is being made toward attainment of federal and state ambient air quality standards. Air quality monitoring data compiled in the 6½ years subsequent to the 2025 Fresno Plan show that population growth and urban development which occurred did not degrade air quality; rather, pollutant levels have been steadily decreasing for ozone/oxidants and for particulate matter (10 microns and 2 microns in size) since 2002.

Ozone/oxidant levels have shown gradual improvement, as depicted in the following graphs and charts from the California Air Resources Board (graphics with an aqua background) and from the San Joaquin Valley Air Pollution Control District (those with no background color):

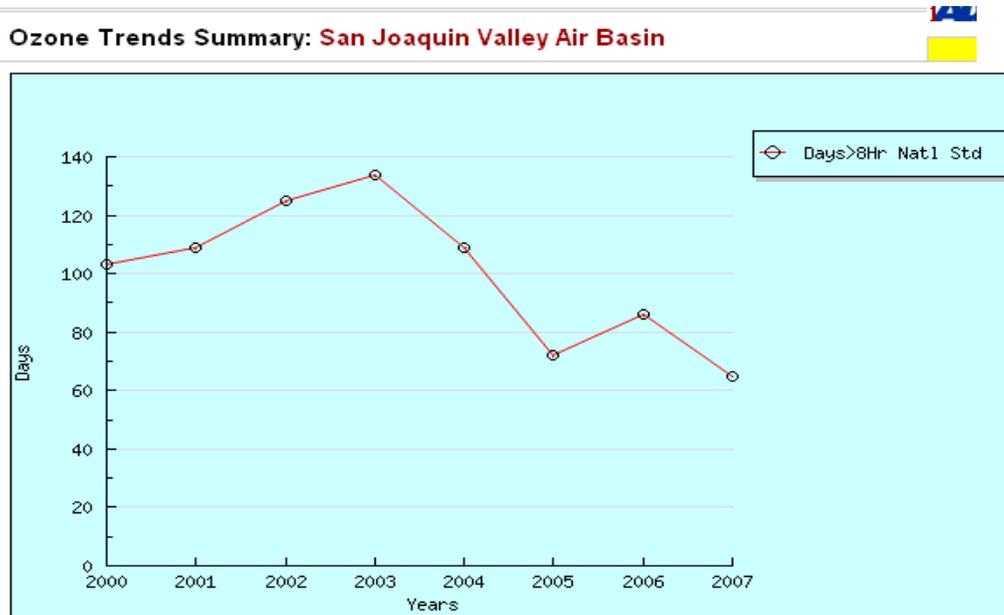


GRAPH NOTES: The "National 1997 8-Hour Ozone Design Value" is a three-year running average of the fourth-highest 8-hour ozone measurement averages in each of the three years (computed according to the method specified in Title 40, Code of Federal Regulations, Part 50, Appendix I).

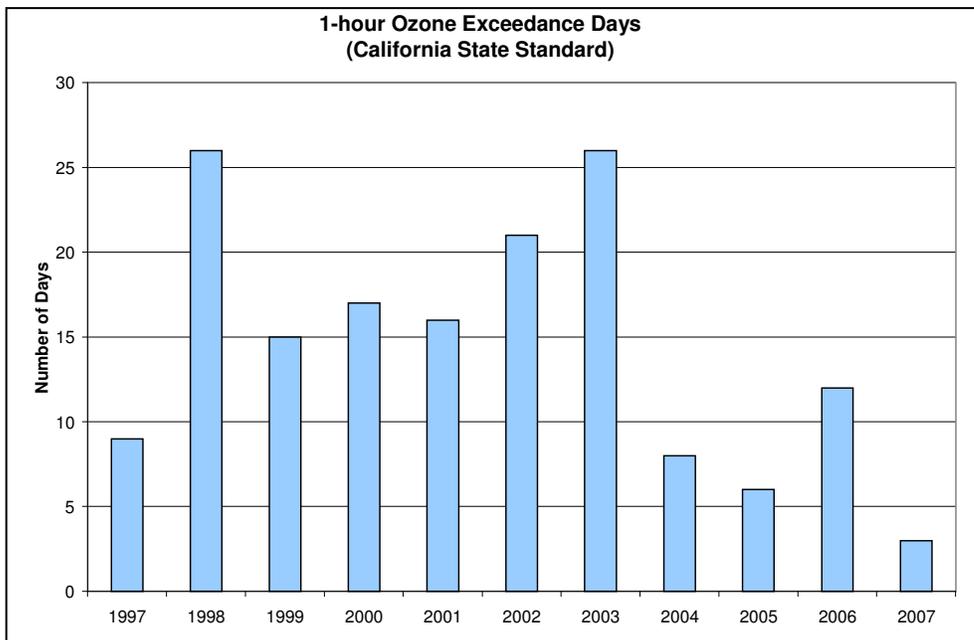
Under the 1997 standard, in effect through the end of 2007, "Attainment" would be achieved if the three-year average were less than, or equal to, 84 parts per billion (ppb), or 0.084 parts per million (ppm). In 2008, a new National 8-Hour Ozone Attainment standard went into effect: a three year average of 75 ppb (0.075 ppm). Data and attainment status for 2008 is expected to become available in 2009.

The California Clean Air Act has a different calculation method for its 8-hr oxidant [ozone] standard design value, and an attainment standard that is lower (0.070 ppm). The ozone improvement trend under the state Clean Air Act 8-hour ozone standard parallels the trend for the national 8-hour standard.

Correspondingly, the number of days per year in which the National 8-hour Ozone Standard has been exceeded have also decreased since the end of 2002:



In 1997, the Federal Clean Air Act repealed the former National 1-hour Ozone standard. However, the California Clean Air Act retains this air pollution parameter. The days per year in which the State of California 1-hour ozone standard has been exceeded have also shown a generally decreasing trend in the time since the 2025 Fresno General Plan MEIR was certified:

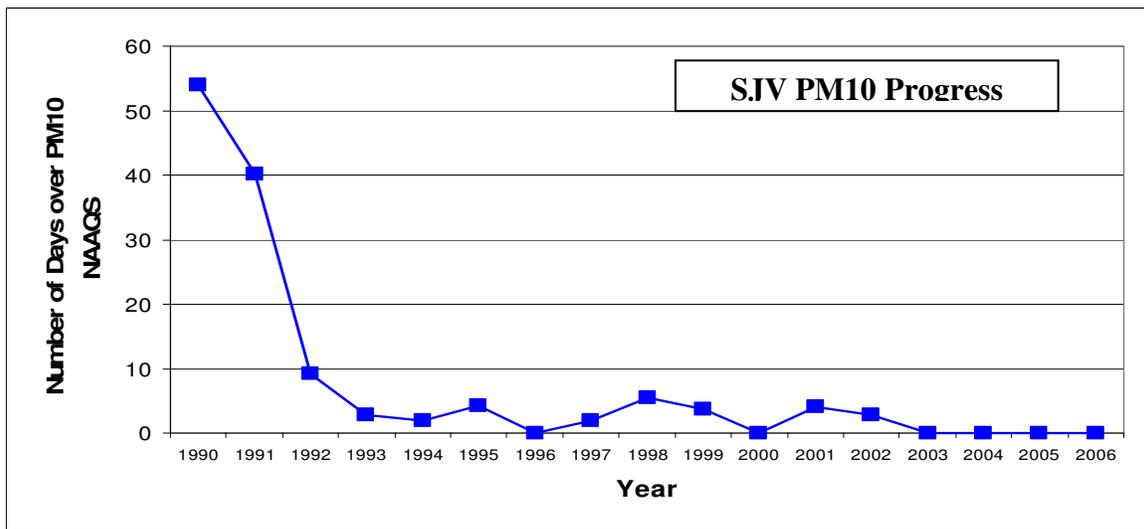


As noted previously, the current ozone attainment plan for the San Joaquin Valley Air Basin, in place when the MEIR for the 2025 Fresno General Plan was certified, is linked to a federal designation of “Serious Nonattainment.” While ozone/oxidant air quality conditions are showing a trend toward improvement, the rate of progress toward full attainment is not sufficient to reach the national ambient air quality standards by the target date established by the attainment plan. Mobile sources (vehicle engines) are the primary source for ozone precursors, and the regulation of mobile sources occurs at the national and state levels and is beyond the direct regulatory reach of the regional air pollution control agency.

In 2004, the San Joaquin Valley Air Pollution Control District, in conjunction with the California Air Resources Board, approved a re-designation for the San Joaquin Valley Air Basin to “Extreme Nonattainment” status for ozone, approving a successor air quality attainment plan that projects San Joaquin Valley attainment of the national 8-hour ozone standard by year 2023. This designation and its accompanying attainment plan were submitted to the U.S. Environmental Protection Agency (USEPA) in November of 2004. To date, no formal action has been taken by USEPA to date on the proposed designation or the attainment plan; the Valley remains in “Severe Non- attainment” as of this writing.

The change from “Severe” to “Extreme” ozone Nonattainment would represent an extension of the deadline for attainment. The proposed revised ozone attainment plan includes not only all the measures in the preceding ozone attainment plan, but additional measures for regulating a wider range of activities to attain ambient air quality standards.

The Valley’s progress toward attaining national and state standards for PM10 (particulate matter less than 10 microns in diameter) has been greater since certification of the MEIR:



As the preceding chart reveals, levels of PM10 air pollution have decreased since 2002. When the MEIR was certified, the San Joaquin Valley Air Basin was designated in “Serious Nonattainment” for national standards. As of 2007, the number of days where standards were exceeded has decreased to the extent that the Valley has been deemed to be in Attainment. Under Federal Clean Air Act Section 107(d)(3), PM10 attainment plans and associated rules and regulations remain in place to maintain this level of air quality. New and expanded regulations proposed to combat “Extreme” ozone pollution and PM2.5 (discussed below) would be expected to provide even more improvement in PM10 pollution situation.

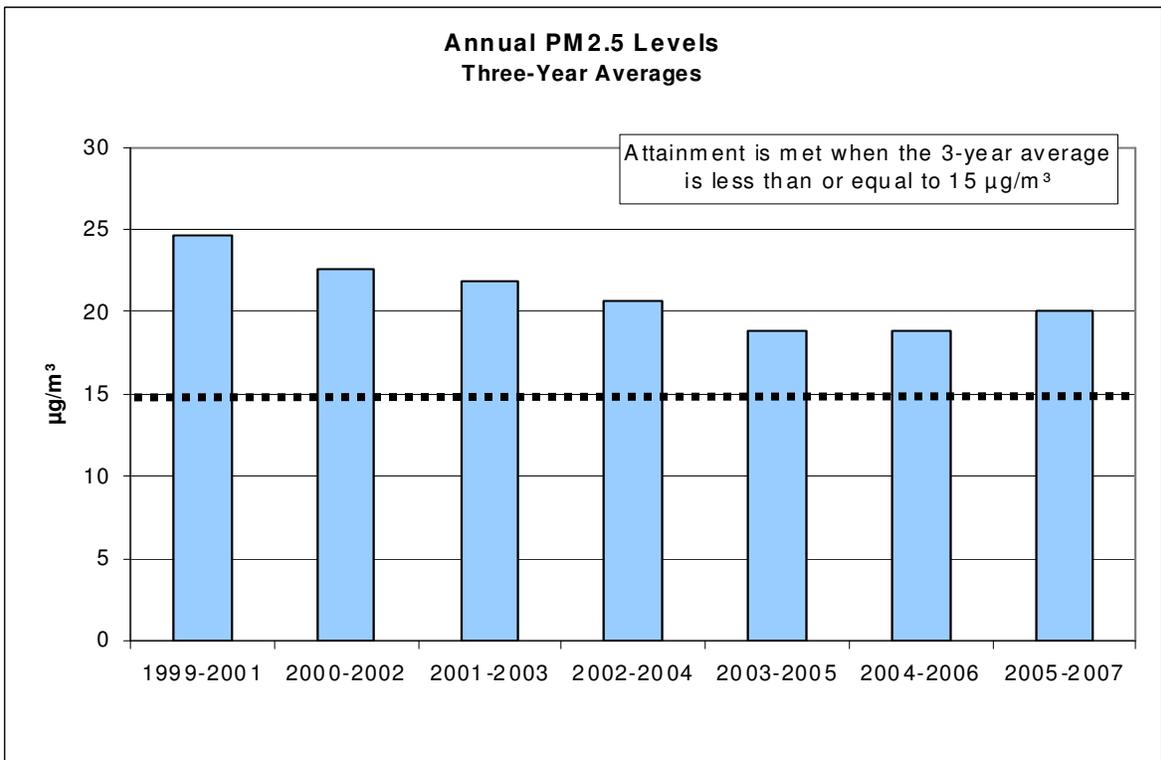
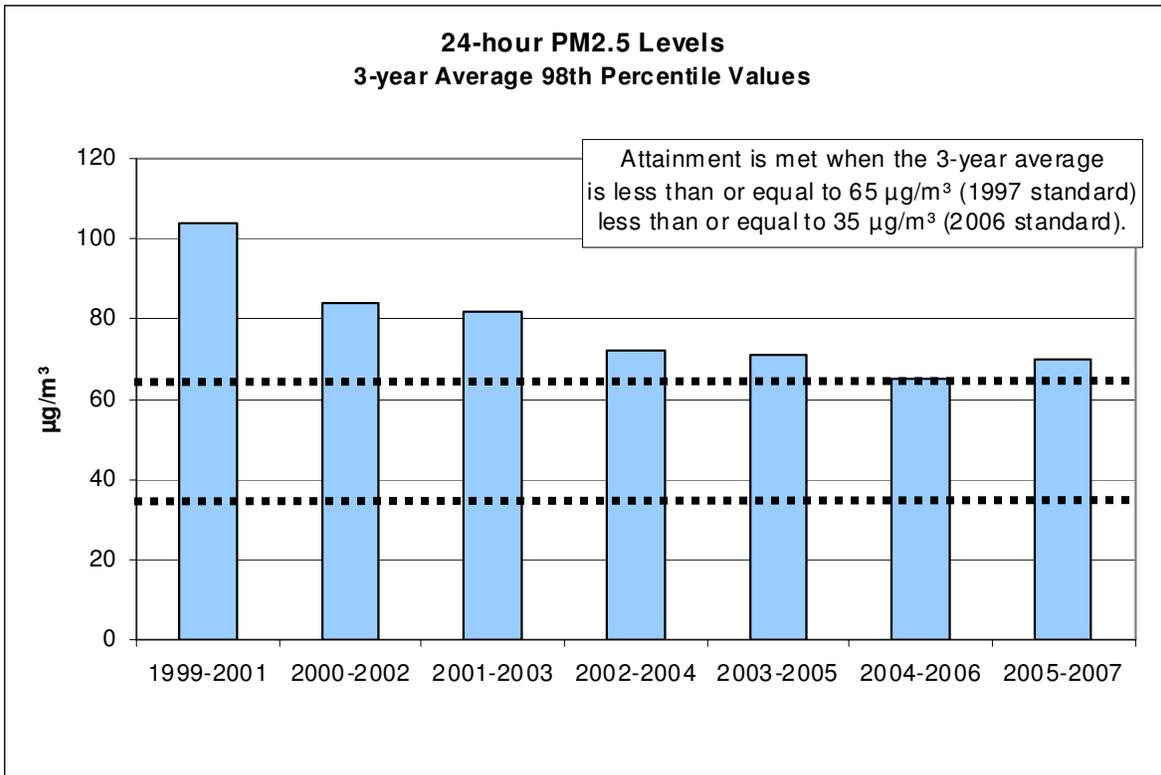
The 2025 Fresno General Plan provided policy direction in support of “indirect source review” as a method for controlling mobile source pollution. Although vehicle engines and fuels are outside the purview of local and regional jurisdictions in California, approaching mobile source pollution indirectly, through regulation and mitigation of land uses which generate traffic, is an alternative approach.

Projects are already being evaluated under Rule 9510 and are implementing many features which mitigate emissions through design: pedestrian and bike facilities; proximal siting of residential and commercial land uses; low-pollution construction equipment; dust control measures; cleaner-burning combustion appliances, etc.. Allocation of Rule 9510 impact mitigation fees for various clean air projects throughout the San Joaquin Valley will accelerate progress toward attainment.

It is anticipated that future augmentation of the Indirect Source Review Rule, will accelerate progress toward attainment of federal and state ozone standards, and will be an important component of the attainment plan for PM2.5 (very fine particulate matter) and for greenhouse gas reductions to combat global climate change.

Federal and state standards/designations for PM2.5 had not been finalized when the 2025 Fresno General Plan MEIR was drafted and its accompanying MEIR certified. The PM2.5 attainment adopted in the intervening time is projected to achieve compliance with the 1997 federal Clean Air Act standard by 2014, in conjunction with California Air Resources Board (and US EPA) action to improve diesel engine emissions. The San Joaquin Valley Air Basin has not yet been classified under the more stringent federal 2006 PM2.5 standard; this classification is expected in 2009 and appropriate attainment planning will ensue.

As with ozone and PM10 pollution, levels of PM2.5 have already been reduced by existing air quality improvement planning policies, mitigation measures, and regulations. The following charts depict historic PM2.5 monitoring data for the regional air basin. With implementation of this attainment plan, the rate of progress toward attainment of federal and state PM2.5 standards will accelerate.



## REQUIREMENTS OF AB 170

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality.

AB 170 requires cities and counties to comply no later than one (1) year from the date specified in Government Code Section 6588 for the next revision of the housing element after January 1, 2004 (Section 65302.1.e). Based upon the schedule outlined in the bill, most jurisdictions in Fresno and Kern counties are required to adopt these amendments by June 30, 2009. AB 170 also requires cities and counties to submit proposed air quality general plan amendments to the San Joaquin Valley Air Pollution Control District (District) at least 45 days prior to adoption of those amendments (*i.e.*, by May 17, 2009), and the District then has 30 days to return comments (Section 65302.1.d ). Under certain circumstances, jurisdictions may petition to the Governor's Office of Planning and Research (OPR) for an extension to comply with the requirements of AB 170.

Section 65302.1.c identifies four (4) areas of air quality discussion required in these amendments. These areas include: (1) a report describing local air quality conditions, attainment status, and state and federal air quality and transportation plans; (2) a summary of local, district, state, and federal policies, programs, and regulations to improve air quality; (3) a comprehensive set of goals, policies, and objectives to improve air quality; and (4) feasible implementation measures designed to achieve these goals. The General Plan elements covered by AB 170 include, but are not limited to, those elements dealing with land use, circulation, housing, conservation, and open space.

The following list provides links to OPR documents regarding AB 170 and general plans.

- OPR General Plan Guidelines Homepage:  
<http://www.opr.ca.gov/index.php?a=planning/plans.html>
- OPR Planning Publications Homepage:  
<http://opr.ca.gov/index.php?a=planning/planningpubs.html#genplan>
- OPR Planning Resources Homepage:  
<http://www.opr.ca.gov/index.php?a=planning/planningpubs.html>
- OPR State Agency Technical Resources for General Plans:  
[http://opr.ca.gov/planning/docs/State\\_Agency\\_Technical\\_Resources\\_for\\_General\\_Plans.pdf](http://opr.ca.gov/planning/docs/State_Agency_Technical_Resources_for_General_Plans.pdf)
- OPR Time Extensions Homepage:  
<http://www.opr.ca.gov/index.php?a=planning/generalplan.html>

AB 170 requires general plans to include feasible implementation measures to reduce air quality impacts. Effective types of mitigation depend on the size and type of project being considered. The District therefore recommends different mitigation strategies for different types of projects.

The District has identified three (3) mitigation strategies, based on project size, which can be used to develop plan-specific feasible mitigation measures.

- 1) General plan update, large specific plan, and new town plan mitigation strategies:
  - Adopt air quality element/general plan air quality policies/specific plan policies
  - Adopt Local Air Quality Mitigation Fee Program (Stockton and Turlock have done so)
  - Fund TCM program: transit, bicycle, pedestrian, traffic flow improvements, transportation system management, rideshare, telecommuting, video-conferencing, etc.
  - Adopt air quality enhancing design guidelines/standards
  - Designate pedestrian/transit oriented development areas on general plan/specific plan/ planned development land use maps
  - Adopt ordinance limiting woodburning appliances/fireplace installations
  - Fugitive dust regulation enforcement coordinated with SJVUAPCD
  - Energy efficiency incentive programs
  - Local alternative fuels programs
  - Coordinate location of land uses to separate odor generators and sensitive receptors
  
- 2) General plan amendment, small specific plan, and zoning change mitigation strategies:
  - Apply general plan policies, local ordinances and programs from above to the project site or adopt similar site specific programs
  - Provide pedestrian/transit oriented project design
  - Contribute to Local Air Quality Mitigation Fee Fund
  - Contribute towards TCM implementation programs
  - Commit to on-site improvements; bikeways, transit infrastructure, pedestrian enhancements
  - Provide traffic flow improvements for areas impacted by the project

- 3) Tentative subdivision map, site plan, and conditional use permit mitigation strategies:
- Apply general plan policies and local ordinances and programs from above to the project site
  - Pedestrian/Transit oriented site design
  - Provide on-site improvement: bikeways, transit infrastructure, pedestrian enhancements
  - Contribute to Local Air Quality Mitigation Fee Fund
  - Contribute to TCM implementation
  - Energy conservation measures above and beyond requirements
  - Pay for fleet vehicle conversions to alternative fuels

These strategies can also be found on the District's website at:  
[http://www.valleyair.org/transportation/air\\_quality\\_mitigation\\_strategie.htm](http://www.valleyair.org/transportation/air_quality_mitigation_strategie.htm)

## **CLIMATE CHANGE / GLOBAL WARMING**

“Global warming” is the term coined to describe very widespread climate change characterized by a rise in the Earth’s ambient average temperatures with concomitant disturbances in weather patterns and resulting alteration of oceanic and terrestrial environs and biota. The predominant opinion within the scientific community is that global warming is currently occurring, and that it is being caused and/or accelerated by human activities, primarily the generation of “greenhouse gases” (GHG).

When sunlight strikes the Earth’s surface, some of it is reflected back into space as infrared radiation. When the net amount of solar infrared energy reaching Earth’s surface is about the same as the amount of energy radiated back into space, the average ambient temperature of the Earth’s surface should remain more or less constant.

Greenhouse gases (GHGs) are gases having properties absorb and emit radiation within the thermal infrared range, and that would cause thermal energy (heat) to be trapped the earth’s atmosphere. It is believed that increased levels of greenhouse gases in the atmosphere can disturb the thermal equilibrium of the earth when natural carbon cycle processes (such as photosynthesis) are unable to absorb sufficient quantities of carbon dioxide and other GHGs in comparison with the amount of GHGs being emitted. It is believed that a combination of factors related to human activities, such as deforestation, emissions of GHG into the atmosphere from carbon fuel combustion, etc. are causing global warming.

Some GHGs occur naturally and are emitted to the atmosphere through both natural processes and human activities. Other GHGs are created and emitted solely through human activities. Water vapor is the most predominant GHG, and is primarily a natural occurrence: approximately 85% of the water vapor in the atmosphere is created by evaporation from the oceans. The major anthropogenic greenhouse gases (those that enter the atmosphere because of human activities) are:

- **Carbon Dioxide** – CO<sub>2</sub> enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products. CO<sub>2</sub> is also as a result of other chemical reactions (e.g., certain manufacturing processes). CO<sub>2</sub> is removed from the atmosphere through the photosynthesis process (the process in which plants absorb and convert CO<sub>2</sub> into energy). Since carbon dioxide is the most commonly-emitted greenhouse gas, quantification of all other greenhouse gases is standardized to CO<sub>2</sub> the term used is “MTCO<sub>2</sub>e,” for “metric tons of CO<sub>2</sub> equivalent.” The Urbemis computer model used to analyze land use and development decisions (mandated to be used for project analysis by policies of the 2025 Fresno General Plan) provides data on estimated emissions of CO<sub>2</sub>.
- **Methane** – CH<sub>4</sub> is emitted during the production and transport of coal, natural gas, and oil. CH<sub>4</sub> is also the natural result of the ruminant digestive processes in mammals (notably, ruminants such as cattle). It is also emitted from the decay of organic waste (such as landfill deposits) and from wastewater collection and treatment facilities. The climate change effect of CH<sub>4</sub> is more powerful than that of CO<sub>2</sub> , so that for every ton of methane emitted the actual effect is multiple MTCO<sub>2</sub>e .
- **Nitrous Oxide** – N<sub>2</sub>O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- **Fluorinated Gases** – Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride are synthetic gases that are emitted from a variety of industrial processes. Some have been used as coolants, replacing “freon” gases that have been banned by global convention. These gases are typically emitted in smaller quantities, but because of their extreme potency, they are sometimes referred to as High Global Warming Potential gases (High GWP gases).

Greenhouse gases are not generally thought of as traditional air pollutants because their impacts are global and diffuse in nature, while criteria air pollutants affect the health of people and other living things at ground level in the general region of their release to the atmosphere.

There are, at this time, no “attainment” concentration standards established by the federal or state government for greenhouse gases, although several of the GHGs are regulated as precursors to criteria pollutants regulated by the federal and California Clean Air Acts. For the most part, efforts to reduce criteria pollutants lead to improvements in GHG emission control. One important consideration when reducing either GHGs or criteria pollutants is to avoid worsening one category of air pollution while attempting to reduce the other.

Analysis of global climate change was not part of the originally adopted 2025 Fresno General Plan, due to lack of scientific consensus on the issue at that time and a lack of analytical tools and regulatory framework. At this point in time, GHG inventory benchmarking and environmental policy formulation tasks are underway by the California Environmental Protection Agency and the Governor’s Office of Planning and Research.

In an effort to address the perceived causes of global warming by reducing the amount of anthropogenic greenhouse gases generated in California, the state enacted the Global Warming Solutions Act of 2006 (Codified as Health & Safety Code Section 38501 *et seq.*). Key provisions include the following:

- ▲ Codification of the state's goal by requiring that California's GHG emissions be reduced to 1990 “baseline” levels by 2020.
- ▲ Set deadlines for establishing an enforcement mechanism to reduce the GHG emissions:
  - By June 30, 2007, the California Air Resources Board (“CARB”) was required to publish “discrete early action” GHG emission reduction measures. Discrete early actions are regulations to reduce greenhouse gas emissions to be adopted by the CARB and enforceable by January 1, 2010;
  - By January 1, 2008, CARB was required to identify what the state's GHG emissions were in 1990 (set the “baseline”) and approve a statewide emissions limit for the year 2020 that is equivalent to 1990 levels. (These statewide baseline emissions have not yet been allocated to regions, counties, or smaller political jurisdictions.) By this same date, CARB was required to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions.
  - By January 1, 2011, CARB must adopt emission limits and emission reduction measures to take effect by January 1, 2012.

As support for this legislation, the Act contains factual statements regarding the potential significant impacts on California's physical environment that could be caused by global warming. These include, an increase in the intensity and duration of heat waves, the exacerbation of air quality problems, a reduction in

the quality and supply of water to the state from the Sierra snow pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

On August 24, 2007, California also enacted legislation (Public Resources Code §§ 21083.05 and 21097) requiring the state Resources Agency to adopt guidelines for addressing climate change in environmental analysis pursuant to the California Environmental Quality Act. By July 1, 2009, the Governor's Office of Planning and Research (OPR) is required to prepare guidelines for the mitigation of greenhouse gas emissions, and transmit those draft regulations to the Resources Agency. The Resources Agency must then certify and adopt the guidelines by January 1, 2010.

Because it is believed that global warming is being caused by human activities on the entire planet, it would be highly speculative to conclude that this project would have a direct adverse impact on global climate. The Urbemis 2007 computer model does provide data on expected tonnage of CO<sub>2</sub> and oxides of nitrogen (NOX). The State of California, in conjunction with CARB and regional air pollution control districts are in the process of establishing CEQA guidelines for the evaluation and mitigation of greenhouse gas emissions.

More detailed discussions of GHGs and current state and federal regulations, and links to other GHG resources can be found on the SJVAPCD website at: [http://www.valleyair.org/Programs/CCAP/CCAP\\_idx.htm](http://www.valleyair.org/Programs/CCAP/CCAP_idx.htm)

Fresno's geographic location (in the Central Valley, in an urbanized area on flat terrain distant from the Pacific coast) would make it unlikely to be significantly directly affected by sea level rise.

It is theorized that global warming would increase the overall level of energy in the atmosphere and thereby cause an increased intensity of storm events, which could in turn cause excess episodic precipitation. Precipitation studies show that Fresno's rainfall occurs during episodic high-intensity events, and that this is a longstanding established weather pattern. The Fresno Metropolitan Flood Control District (FMFCD) Drainage and Flood Control Master Plan is periodically updated and these updates and analyses incorporate ongoing precipitation studies. The FMFCD Master Plan sets policies for drainage infrastructure and grading in the entire Fresno-Clovis area, and is already predicated on this type of weather pattern. Storm drainage facilities are sized for storm intensities expected in 50± percent of average years. The urban drainage system design has additional runoff capacity built into the street system so that excess precipitation from more intense storm events is directed to the street system. Ultimately, drain inlets and FMFCD drainage basin dewatering pumps direct severe storm runoff into the network of Fresno Irrigation District canals and

pipelines still extant in the metropolitan area, with outfalls beyond the western edge of the metropolitan area. (These canals have capacity when not being used to accommodate irrigation deliveries during the dry hot weather months.) FMFCD project conditions also preserve “breakover” historic surface drainage routes for runoff from major storms. The City of Fresno’s Flood Plan Ordinance and grading standards require that finished floor heights be above the crowns of streets and above any elevated ditchbanks of irrigation canals. Therefore, existing drainage plans and infrastructure would be expected to respond to increases in intense storm events that could be attributed to global warming.

If the potential effects of climate change cause a serious and persistent decrease in the Sierra snowpack, some of Fresno’s water supply could be affected. The City derives much of its water supply from groundwater, using its surface water entitlements from the Kings and San Joaquin Rivers primarily to recharge the aquifer (in addition to precipitation captured and percolated in ponding basins, in conjunction with Fresno Metropolitan Flood Control District). It treats and distributes only a portion of its surface water supply from the San Joaquin and Kings Rivers in the municipal water system. In times of drought, a reprioritization of water deliveries and reallocation for critical urban supplies vs. agricultural use is likely. The City’s Metropolitan Water Resources Plan contains contingencies and responses for drought situations which would be employed if global warming were to directly or indirectly reduce the City’s water supply.

Due to longstanding city policies incorporating fire protection measures into all development and construction, and due to Fresno’s location distant from foothill rangeland and mountainous timber land, the City is not generally subject to wildfire hazards. (It is acknowledged that the vegetation on the steep San Joaquin River face does present a wildfire risk that is not easily managed by mechanical vegetation removal, due to risk of erosion.) Residents of Fresno could be affected by any global warming-induced increased wildfire occurrence, due to widespread air quality degradation that massive fires can cause through broad regions of California.

Fresno has historically had high ambient summer temperatures and a resulting heat mortality level that is among the highest in the state (5 heat-related deaths annually per 100,000 population). Due to the prevalence of air conditioning in dwellings and commercial buildings, an increase in extreme heat days from global warming is not expected by the California Air Resources Board Research Division to significantly increase heat-related deaths in Fresno, as opposed to possible effects in cooler portions of the state such as Sacramento or Los Angeles areas (reference: *Projections of Public Health Impacts of Climate Change in California: Scenario Analysis*, by Dr. Deborah Dreschler, Air Resources Board, April 9, 2008). Increased summertime temperatures which may be caused by global warming will be mitigated by the City’s landscaping standards to provide shade trees, by statewide energy efficiency standards which insulate dwellings from heat and cold, and by urban design standards which

require east-west orientation of streets and buildings to facilitate solar gain. Fresno has a heat emergency response plan and provides cooling centers and free transportation to persons who do not have access to air conditioning.

Secondary health effects of global warming could include increases in respiratory and cardiac illnesses attributable to poor air quality. The San Joaquin Valley Air Pollution Control District (SJVAPCD) provides daily advisories and warnings in times of high ozone levels to help senior citizens and other sensitive populations avoid exposure.

As noted previously, the SJVAPCD has achieved attainment of federal fine particulate matter (PM10) standards and has committed to attaining PM2.5 standards by Year 2014. The District has also committed to attainment of federal oxidant/ozone standards by Year 2023. Additional SJVAPCD Rules and emission controls will be approved as necessary to decrease emissions by those target dates. Any exacerbation of criteria air pollutants caused by global warming will be reflected in air pollution monitoring and will be factored into future iterations of attainment plans for criteria pollutants. Additional District rulemaking would be required to stay on course toward attainment status for criteria pollutants.

## **CONTROL STRATEGIES FOR GREENHOUSE GASES**

The 2025 Fresno General Plan objectives and policies will be augmented with policies focusing on prevention of global climate change through GHG emission reductions.

Existing policies in the 2025 Fresno General Plan call for increasing the amount of landscaped open space and shading. The original intent of these policies was to ameliorate the urban heat island effect, which would help moderate Fresno's ground level temperatures. with recognition that plants generate oxygen and tend to improve air quality at ground level. These policies would further efforts to control greenhouse gases, because plants "sequester" CO<sub>2</sub>. they withdraw CO<sub>2</sub> from the atmosphere and build it into their tissues.

Overarching control and prevention strategies already in the General Plan for criteria air pollutants will reduce greenhouse gas emissions: reductions in vehicle trips and vehicle miles traveled through increased densities, mixed use development, facilitation of increased mass transit use, and greater pedestrian and bicycle accessibility; reduced and cleaner combustion processes. Many existing 2025 Fresno General Plan policies for land use, transportation, public facilities, and air pollution prevention already act to reduce or prevent global climate change. Approaches to analyzing and reducing greenhouse gases tend to look not only at primary transportation involved in land use (i.e., customer vehicles and vehicles used by a business itself), but also the transportation of goods and materials from their point of production elsewhere in the world to the site where these goods and materials are used for construction or inventory.

Currently, a vast amount of carbon combustion in the United States and in California occurs in order to supply electricity and heat building spaces. Most of the carbon consumed for power generation and heating comes from nonrenewable resources such as petroleum and coal. Therefore, strategies to reduce GHGs emphasize energy efficiency and look for ways to generate power from non-combustion or renewable resources. Use of recycled methane from human and animal waste processing as a combustion fuel stock would generate some CO<sub>2</sub> but prevents atmospheric emissions of methane, which (as noted above) is a much more powerful GHG than CO<sub>2</sub>.

Water and wastewater utilities are major consumers of electrical power: the City of Fresno's aggregate power cost for water and sewer utilities in FY08 was approximately \$14 million, even though the Regional Wastewater Treatment and Reclamation Facility generates much of its own electrical power through a cogeneration facility using gas emanated from plant digesters. There are opportunities to make City utility operations more energy-efficient, primarily through water conservation efforts (approximately one-third of the water distributed by the Water Division is subsequently processed by the Wastewater Facility). Efforts to reduce water consumption for the purpose of GHG reduction would work in concert with conservation efforts aimed at eliminating water waste.

Energy is consumed in the removal and processing of resources and in manufacturing of finished goods. Processes such as demolition, waste collection and disposal generate GHGs from equipment and vehicle emissions, combustion, and landfill gas. Therefore, recycling is considered a useful strategy for combating greenhouse gas accumulation, since it avoids these sources of GHGs. The City of Fresno has complied with State of California solid waste diversion regulations, achieving a recycling rate of over 70% (highest in the nation). The City also recycles 100% of its pavement material when doing street improvements. Opportunities exist to further improve the recycling program and to encourage reutilization of structures.

Greenhouse gas control efforts focus on these multiple aspects of emissions, attempting an integrated, broad-based strategy for "sustainability" to incorporate:

- heightened energy efficiency incorporated into all aspects of structural design and operations, as appropriate to local climate;
- rehabilitation and renovation of existing structures, incorporating and upgrading energy efficiency measures;
- reduction in vehicle-related emissions;
- utilization of renewable and non-polluting sources of energy;
- incorporation of recycled and renewable materials in construction;
- reduction in use and generation of toxic materials that require special handling and disposal;

- ✿ increasing landscaping in ways appropriate to local climate;
- ✿ water conservation; and
- ✿ water recycling.

Some GHG analysis and reduction protocols take an analytic approach to extensively quantify and document each potential emission and reduction measure. This approach is deemed more appropriate for major industrial facilities which would require specific permitting for pollutants under SJVAPCD regulations, and are required by law to annually report GHG emissions. These facilities may generate GHGs of a magnitude considered to create a potentially significant adverse environmental impact; yet, due to considerations of energy demand or economic development in a community, such facilities may be deemed critical facilities that need to be approved. Elaborate mitigation strategies are therefore employed, which may include purchasing of greenhouse gas emission credits, commonly referred to as “carbon [offset] trading.”

In “carbon trading,” GHG reductions achieved by one facility or program may be applied to mitigate the potential effects of another proposed facility or program. Quantified GHG reductions offered as “credits” are typically “discounted,” so that the end result after use of “credits” is an overall net reduction in emissions. There are companies which generate and sell “carbon credits” at a national level through such measures as planting forests. Other firms generate “credits” through solar power installations and energy efficiency measures.

In an effort to ensure that GHG emission reductions are properly verified and standardized, to retain GHG reductions and their accompanying air quality benefits within the San Joaquin Valley region, and to facilitate local economic development, the SJVAPCD has initiated steps to create a regional “carbon trading” exchange.

GHG emissions can be estimated for smaller projects, and energy and water conservation audits can also be done for individual projects. Studies based on statistically valid sampling of these smaller projects can be used to periodically evaluate the usefulness of GHG control measures. Other parameters (such as recycling rates and vehicle miles traveled) are variable or difficult to measure for individual smaller projects, making them less useful for evaluating minor projects. These types of statistical tools are best applied to analysis of larger geographical areas.

Jurisdictions and major urban functions can be “benchmarked” for total GHG emissions through “carbon footprinting” computer models. The CARB and SJVAPCD statewide and regional inventory and benchmarking processes are not yet completed, but are expected soon. The resulting data will guide goals and measures adopted to reach those goals.

Most jurisdictions' GHG reduction plans, and the City of Fresno's intended General Plan strategy for addressing global climate change, is to focus on a qualitative and performance-based approach that maximizes opportunities to reduce greenhouse gas emissions through multiple approaches.

As noted previously, objectives and policies throughout the 2025 Fresno General Plan (in Regional Cooperation, Implementation, Urban Form, Public Facility, Recreational Open Space, and Resource Conservation Elements) are aimed at reducing criteria pollutants and will also collaterally reduce GHG emissions.

A new objective is proposed to be added to the Air Quality section of the Resource Conservation Element (following), specifically calling for reduction in GHG emissions with supporting policies and implementation measures.

utilizing a qualitative analysis approach, projects consistent with, and appropriately implementing, air pollution and GHG reduction policies, and which mitigate any potentially significant project-specific GHG impacts, will be deemed to conform to GHG reduction requirements and to contribute to the City's overall GHG reduction goals. Periodic broadscale GHG modeling will be used to validate the efficacy of these measures and guide implementation and further rulemaking.

## RESOURCE CONSERVATION ELEMENT

### Air Quality and Global Climate Change

OBJECTIVE G-1 In cooperation with other jurisdictions and agencies in the San Joaquin Valley Air Basin, take necessary actions to achieve and maintain compliance with state and federal air quality standards for criteria pollutants.

Policy G-1-a Support and encourage regional, state and federal programs and actions for the improvement of air quality.

Policy G-1-b As affirmed by Resolution of the City Council on April 9, 2002, implement the list of Reasonably Available Control Measures (RACM) submitted by the San Joaquin Valley Air Pollution Control District (SJVAPCD) to the Environmental Protection Agency as part of the Ozone Attainment Plan designed to reduce ozone forming emissions from operations and/or services the city controls.

Policy G-1-c Preserve reasonable compatibility between Federal/State Air Quality Attainment and Maintenance Plans and the Fresno General Plan and its resulting urban development through the following implementation measures:

- (1) Develop and incorporate air quality maintenance considerations in the preparation and review of land use plans and development proposals.
- (2) Maintain internal consistency within the general plan between policies and programs for air quality resource conservation and the policies and programs of other general plan elements.
- (3) Utilize appropriate computer models (software recommended by San Joaquin Valley Air Pollution Control District or other air quality agencies) to evaluate air quality impacts of projects that require environmental review by the City of Fresno.
- (4) Information regarding land use plans, development projects, and amendments to development regulations will continue to be routed to the San Joaquin Valley Air Pollution Control District for that

agency's review and comment on potential air quality impacts.

Policy G-1-d Continue to implement broad scale general plan strategies to decrease the generation of air pollution through the reduction of vehicle miles traveled, excessive vehicle traffic congestion and excessive engine idling by implementation of public transportation and other alternatives to private automobile travel.

Policy G-1-e Maintain the following general plan land use policies and supportive city regulations to implement air quality improvement through the planning process:

- (1) multi-use activity center and high-intensity transportation corridor concepts that locate the most intensive commercial and employment activities so that they are proximal to higher density residential areas or are readily accessible from main transportation routes.
- (2) contiguous urban expansion through implementation of the city's Urban Growth Management program and by agreements with the county that control or preclude urban development outside incorporated boundaries.
- (3) infill and appropriately intensified development within the center city and other appropriate locations near transportation routes to reduce peripheral urban development. This is encouraged through plans and policies that endorse more intensive land uses and use of incentives such as those available in redevelopment areas and the Fresno Enterprise Zone, Community Development Block Grant (CDBG) funding for public improvements, and development fee or public improvement cost reductions funded by appropriate council approved programs and mechanisms.
- (4) mixed land use development guidelines that provide more pedestrian-oriented neighborhoods by siting commercial, light industrial, institutional (school, church) and office uses within residential areas. The city's Local Planning and Procedures Ordinance allows for special permits and master-planned

developments which integrate compatible mixed uses, however, a comprehensive revision of the Zoning Ordinance is appropriate to facilitate more innovative development concepts.

- (5) density transfer provides for the reallocation of dwelling units within specified areas where transportation and other infrastructure can support increased densities.
- (6) subdivision and other residential development designs which facilitate pedestrian access to bus stops and other transportation routes.
- (7) maintain and improve transit-related requirements for development, including on-site bus parking and loading lanes with passenger and driver facilities at major shopping centers and other high-traffic locations.
- (8) expand programs to reduce traffic congestion and improve traffic flow. Particular effort should be placed on further improvement of traffic signalization to reduce stop-and-go traffic, which causes excess vehicle emissions from excessive idling. This program requires various strategies and equipment, including optimized signal timing, interconnected signals, traffic-actuated signals, computer based controls, channelized intersections, and additional turn lanes.
- (9) complete the city's network of alternative bicycle and pedestrian transportation routes: the Master Trail system's pedestrian and bikeway components, bicycle lanes on streets, and ancillary safety and convenience facilities to encourage use of these alternative modes of transport.
- (10) provide for additional landscaping which helps maintain and improve air quality, by continuing to increase the extent of landscaped areas in the city using street trees, parking lot shading, median islands, and landscape buffers.

Policy G-1-f Maintain the city's construction standards that require cleaner burning prohibit wood heaters.

- Policy G-1-g Support and encourage employer implementation of staggered work hours and employee incentives to use carpools, public transit and other measures to reduce vehicular use and traffic congestion.
- Policy G-1-h Support efforts to enforce vehicle registration requirements and compliance with vehicle emission standards.
- Policy G-1-i Encourage development proponents to offset or mitigate project air pollution emissions by buying and removing older, higher-polluting vehicles from service.
- Policy G-1-j Control and reduce air pollution emissions from city operations and facilities. The city Department of Administrative Services Fleet and General Services Divisions will undertake the following implementation measures:
- (1) continue to ~~explore the potential for using~~ expand the use of alternative fueled vehicles in city fleets.
  - (2) preventive maintenance schedules that will ensure efficient engine operation.
  - (3) air conditioning recycling and charging stations at vehicle maintenance facilities, to reduce Freon gases being released into the atmosphere. Electrostatic filtering systems in city maintenance shops, when feasible or when required by health regulations.
  - (4) satellite corporation yards for decentralized storage and vehicle maintenance, if cost-effective and demonstrated to reduce vehicle miles traveled.
  - (5) conversion of city-owned emergency backup generators to natural gas fuels whenever this would be safe, cost-effective, feasible, and dependable.
- Policy G-1-k Continue efforts to improve Fresno Area Express technical performance, emission levels, and system operations, through such implementation measures as:

- (1) selecting and maintaining bus engines, transmissions, fuels, and air conditioning equipment for efficiency and low air pollution emissions.
- (2) siting new transit centers and other multi-modal transportation transfer facilities to maximize utilization of mass transit.
- (3) ~~continue efforts to~~ improve on-time performance, increase frequency of service, extend hours of operation, add express bus service, and align routes to capture as much new ridership as possible.
- (4) initiating a program to allow employers and institutions (e.g., educational facilities) to purchase blocks of bus passes at a reduced rate to facilitate their incentive programs for reducing single-passenger vehicle use.

## Policy G-1-I

Airport operations shall ~~be reviewed for~~ continue to ~~opportunities to~~ improve and maintain air quality, using ~~Such~~ implementation measures such as the following shall ~~be explored~~:

- (1) mowing or spraying herbicide on weeds in unpaved airfield areas (rather than disking them) to reduce dust.
- (2) limiting the use of Fresno Air Terminal's aircraft burn safety drill pit to training for on-airport safety agencies.
- (3) encouraging aircraft operators to use flight training simulators as a substitute for training flights in actual aircraft, whenever possible.
- (4) increasing the city's role in monitoring airport tenant compliance with regulations for vapor recovery systems and other fueling/defueling operations.
- (5) establishing a procedure to open additional exit booths when the number of vehicles waiting to exit airport parking lots exceeds a specified amount of stacking

- (6) routine maintenance and wet sweeping of airport service roads, taxiways, and runways to remove dirt and tire wear debris
- (7) relocating and designing the airport consolidated rental car facility within walking distance to the terminal in order to avoid traffic conflicts and queuing
- (8) use of airport land area for solar installations
- (9) use of connecting bridges to supply electrical power to parked aircraft, in order to avoid using jet engines to supply onboard power.
- (10) use of “pushback tugs” for moving aircraft on the apron in order to avoid using jet engines to moving aircraft on the ground.
- (11) providing one or more charging stations to allow conversion of airlines’ tugs, baggage carts and maintenance vehicles to non-combustion engines

Policy G-1-m

The Public Works Department shall continue to play a pivotal role in air quality improvement through such implementation measures as:

- (1) continued implementation of bikeway, bike path, and pedestrian trail plans.
- (2) continued pursuit of grade separations where railroads intersect with city streets.
- (3) continued pursuit of adequate funding for computer-controlled, synchronized traffic signal systems.
- (4) reduction and prevention of entrained dust by routine wet street sweeping, hardscaping of curb/gutter and road shoulder areas, and elimination of unpaved parking lots.

Policy G-1-n

The Department of Public Utilities shall continue to pursue opportunities to reduce air pollution by using methane gas from the old city landfill, and continuing to use methane from the city's wastewater treatment process, to fuel cogeneration.

Policy G-1-o Whenever feasible, the Police Department shall continue to reduce air pollution through such implementation measures as:

- (1) placement and use of police dressing stations within or near field personnel work areas.
- (2) use of existing community facilities as walk-in crime prevention centers.
- (3) expansion of public services at dressing stations and/or community walk-in facilities--for example, making it possible to file police reports or obtain copies of police reports at these satellite sites.
- (4) handling certain types of calls for police service and records requests by telephone.
- (5) police vehicle fleet management program to increase efficiency in the use of vehicles.
- (6) bicycling and walking police beats in some areas.

Policy G-1-p Evaluate and pursue long-range transportation measures that are determined to be effective in reducing air pollution, including the following implementation measures:

- (1) development of express bus corridors on principal transit routes and ~~light rail service in railroad rights-of-way that are proposed for abandonment in the city.~~
- (2) feasibility studies and programs aimed at providing light rail service in freeway medians and in railroad rights-of-way that are proposed for abandonment in the city.
- (3) determine feasibility and pursue implementation of a mass-transit corridor utilizing a fixed or automatic guideway system or other suitable state-of-the-art people-mover technology to support the planned high residential densities and intensive uses in the city's Mid-Rise/High-Rise Corridor along Freeway 41, extending from Freeway 99 northerly to Audubon Drive.

- (4) addition of high occupancy vehicle (HOV) travel lanes on freeways serving the Fresno-Clovis-Madera urban area.
- (5) identify and pursue measures that enhance the city's ability to obtain or use land for on-site bus turning and parking areas and construct attendant employee and passenger facilities.

Policy G-1-q In cooperation with the San Joaquin Valley Air Pollution Control District, examine potential sources of revenue to pay for air quality improvement measures. ~~With a Participate in~~ Participate in nexus studies to demonstrate the need for and benefit of this type of program, revenue collected to combat air pollution, when such revenue could be used for implementing the following prioritized air quality-oriented programs:

- (1) computerization/synchronization of the city's traffic signals.
- (2) mass transit improvements and operating subsidy.
- (3) development of alternative modes of transportation such as bike lanes/paths and trails.
- (4) remedial improvement of existing congested intersections and underdeveloped planned city streets.
- (5) the planting of more trees and other landscaping in the city.

OBJECTIVE G-2 In cooperation with other jurisdictions and agencies in the San Joaquin Valley Air Basin, take necessary actions to achieve and maintain reductions in greenhouse gas emissions in order to limit and prevent potential human-caused global climate change.

Policy G-2-a Establish and uphold planning criteria and environmental analysis protocols that evaluate potential greenhouse gas emissions from public and private projects and provide useful reduction and mitigation strategies through implementation measures including the following:

- (1) When reviewing private and public projects, City departments shall incorporate greenhouse gas analysis and mitigation measures, and shall utilize thresholds of significance, adopted by the San Joaquin Valley Unified Air Pollution Control District, the California Office of Planning and Research, and the California Environmental Protection Agency.
- (2) The City shall participate in greenhouse gas emission inventory and “benchmarking” efforts to evaluate the current status of emissions for the incorporated city and for city facilities, and shall use this information to set appropriate targets for GHG reductions in order to achieve compliance with AB 32 mandates to roll back GHG emissions. Re-evaluation of the City’s GHG emissions will be done at five-year intervals (or more frequently as may be mandated by the State of California) to determine the efficacy of adopted measures and to guide future rulemaking needed to achieve GHG reduction goals.
- (3) The City shall develop policy for “banking” carbon emission “credits” generated through City facilities, programs, and policies, and for “trading” or otherwise assigning these “credits” or funds derived from “trading” credits to projects and programs/activities within the City to optimize local benefit from City GHG emission reduction efforts and expenditures. This policy shall address acceptable “credits” for mitigating projects proposed in Fresno, again to optimize local benefit from GHG reduction programs.
- (4) The City shall partner with air pollution control agencies to advise project applicants of greenhouse gas and air pollutant emission significance thresholds, mitigation requirements, and control regulations promulgated by federal, state, regional, and local agencies.
- (5) The City shall utilize its code enforcement police power to ensure ongoing compliance with requirements for air quality and sustainability measures incorporated into projects’ design, conditions of approval, and mitigation measures.

Policy G-2-b Incorporate GHG emission reductions in land use decisions, facility design, and operational measures subject to City regulation through implementation measures such as the following

- (1) The City shall support, promote and seek opportunities to expand incentive-based programs that involve certification of projects for energy and water efficiency and sustainability. These certification programs and scoring systems may include public agency “Green” and sustainable criteria (such as the Sustainable Building Policies as established by the City Council on February 1, 2005, which may be expanded by the City Council), Energy Star™ certification, Leadership in Energy Efficient Design (LEED™) certification, etc.
- (2) The City shall consider adoption of ordinances and policies that would require appropriate energy and water conservation standards; would further facilitate mixed use projects; would increase incentives for infill development; and would increase the incorporation of mass transit, bicycle and pedestrian amenities into public and private projects.
- (3) The City shall consider an ordinance requiring energy audits and upgrades for water conservation, energy efficiency, and mass transit, pedestrian and bicycle amenities at the time of renovation, change in use, change in occupancy, and change in ownership.
- (4) The City shall provide residents and project applicants with a “toolkit” of understandable feasible measures that can be used to reduce greenhouse gases and criteria pollutants, including educational materials on energy-efficient and “climate-friendly” products.
- (5) As part of the annual City budget process, each department shall review the current version of the Institute for Local Government California Climate Action Network Best Practices Framework and seek ways to incorporate and implement greenhouse gas reduction measures through retrofit, rehabilitation, and new programs and projects.

- (6) The City shall evaluate its facility maintenance practices for opportunities to reduce GHGs, looking at facility cleaning and painting, parks maintenance, road maintenance, and utility system maintenance.
- (7) The City shall re-evaluate standards, design, and mitigation strategies for highly vehicle-dependent land uses and facilities such as, but not limited to, drive-through windows
- (8) The City shall consider strengthening its standards for purchasing low-polluting and climate-friendly goods and services, requiring that emission reductions be achieved by vendors and contractors through City contracts and/or giving preference to those who demonstrate implementation of GHG and criteria air pollution emission reductions in their facilities and operations.

Policy G-2-c Prioritize energy and water conservation through the following implementation measures, utilizing the most current versions of the City's Urban Water Management Plan and Metropolitan Water Resources Management Plan as source documents for data and for prioritizing actions:

- (1) The City shall revise land use policies, ordinances, development standards and landscape/shading standards to incorporate appropriate water conservation, water recycling, and recharge measures into private and public project analysis and design (e.g., requiring installation of dual color-identified plumbing that would accommodate future use of recycled water for landscaping).
- (2) The City shall consider water conservation needs when revising its utility billing structure.
- (3) The City shall consider adoption of ordinances and policies that would require water efficiency audits and conservation upgrades at the time of renovation, change in use, change in occupancy, and change in ownership.
- (4) Where feasible, sanitary and energy-efficient, the City shall use recycled water for facilities such as parks and landscape strips and medians, and for operations

such as construction dust suppression and wet street sweeping.

- (5) In conjunction with other area water agencies, the City shall continue and expand its consultation and public information to residents and project applicants on water conservation and water-efficient landscaping.

Policy G-2-d Maintain current levels of achievement for recycling and re-use of all types of waste material in the City, and further enhance waste and wastewater management practices to further achieve reductions in greenhouse gas emissions through implementation measures such as the following:

- (1) The City shall continue to require provisions for recyclable material collection and storage areas to be incorporated into all residential development designs, and shall expand this requirement to all industrial facilities, sizing the recycling area for industrial development according to the anticipated types and amounts of recyclable material generated.
- (2) The City shall consider establishing incentives and a utility rate structure that foster increased participation in residential recycling and green waste diversion.
- (3) The City shall consider instituting a program to evaluate major waste generators and to recommend recycling opportunities for their facilities and operations.
- (4) The City shall continue to partner with the California Integrated Waste Management Board to participate in waste diversion and recycling programs such as the tire collection and recycling program, community recycling education, and the CalMax (California Materials Exchange) program.
- (5) The City shall consider instituting a restaurant and institutional food waste segregation and recycling program, to reduce the amount of organic material sent to landfill.
- (6) The City shall consider “carbon footprinting” for its wastewater treatment facilities, biomass and

composting operations, solid waste collection and recycling programs, and shall design measures to further reduce GHG emissions in the operation of these facilities and programs.

Policy G-2-e Make transportation facilities and services more efficient and more oriented toward achievement of GHG reduction through implementation measures such as the following:

- (1) In consultation with other area jurisdictions, the City shall consider developing a strategic park & ride plan utilizing lots and parking garages located near highly-traveled roadways and mass transit facilities. In order to ensure success of this plan, public opinion surveys shall be used to determine what locations, features, and operational factors would best ensure use of the park & ride facilities. Siting and operational costs for park & ride facilities may include, but would not be limited to, grants, subsidies, development impact fee programs, parking charges on public and private parking lots, and mitigation programs.
- (2) The City shall pursue potential additional sources of revenue for operating and expanding its mass transit bus service to increase frequency of service, routes and areas served, and to improve on-time performance. These additional sources of revenue may include, but would not be limited to, citywide parking charges on public and private parking lots, mitigation programs, etc.
- (3) The City shall consider adoption of ordinances that establish transit bus precedence over other vehicles when buses attempt to re-enter traffic at bus stops, so that transit on-time performance is enhanced.
- (4) The City shall consider a requirement that public and private facilities offer preferred parking spaces and/or preferred parking rates for low-emission vehicles, vans and carpool vehicles.

Policy G-2-f Enhance landscaping throughout Fresno, consistent with energy and water conservation principles.

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- (1) The City shall ensure that xeriscape and “green gardening” practices are implemented in public and private landscaping design and maintenance.
- (2) The City shall establish consistent policies for acquiring open space easements and fee title open space, addressing future maintenance as part of the approval process for open space projects and for projects which incorporate public open space.